T0259D-25B6860

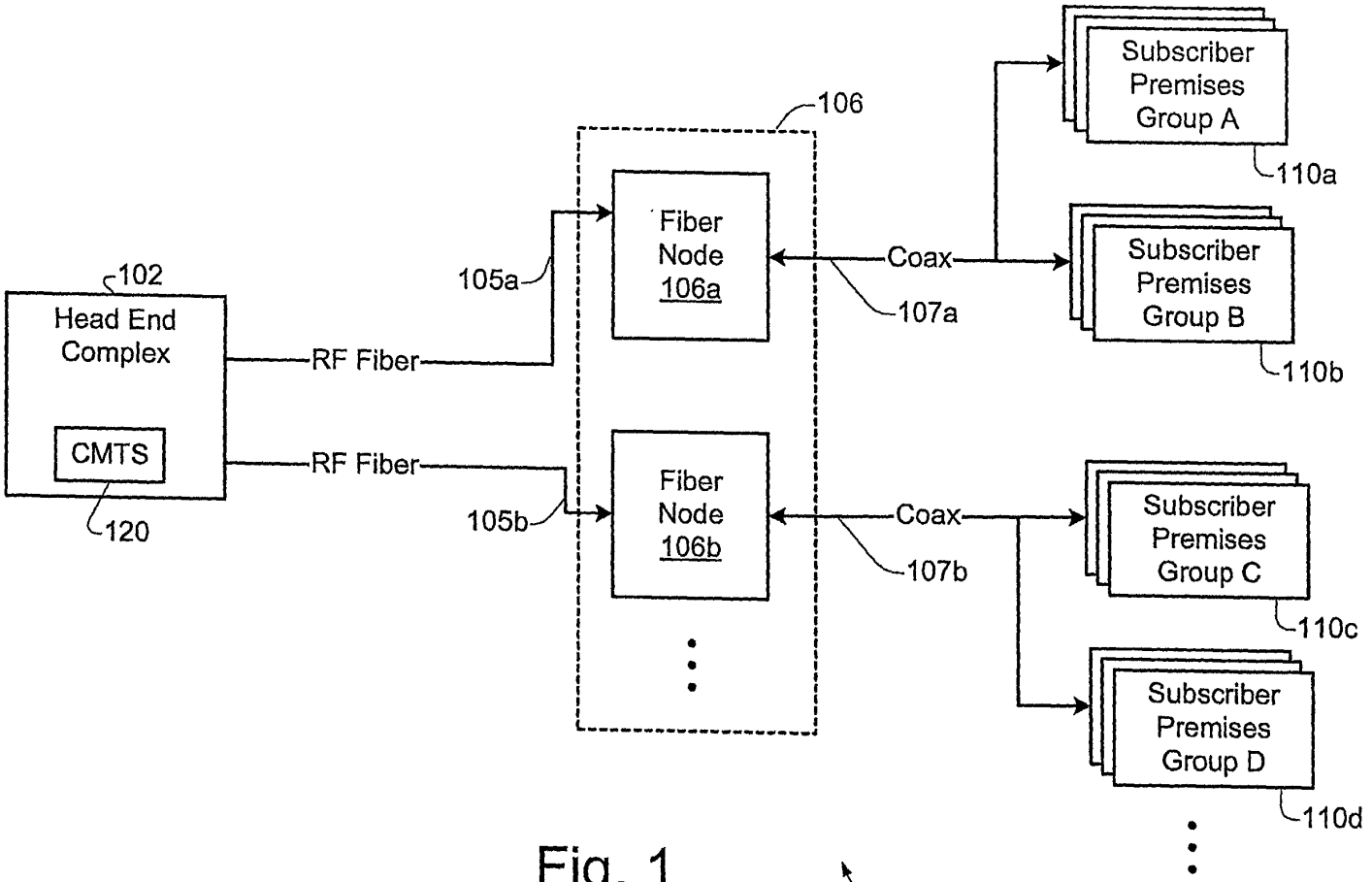


Fig. 1
(Prior Art)

TO2250 E5811660

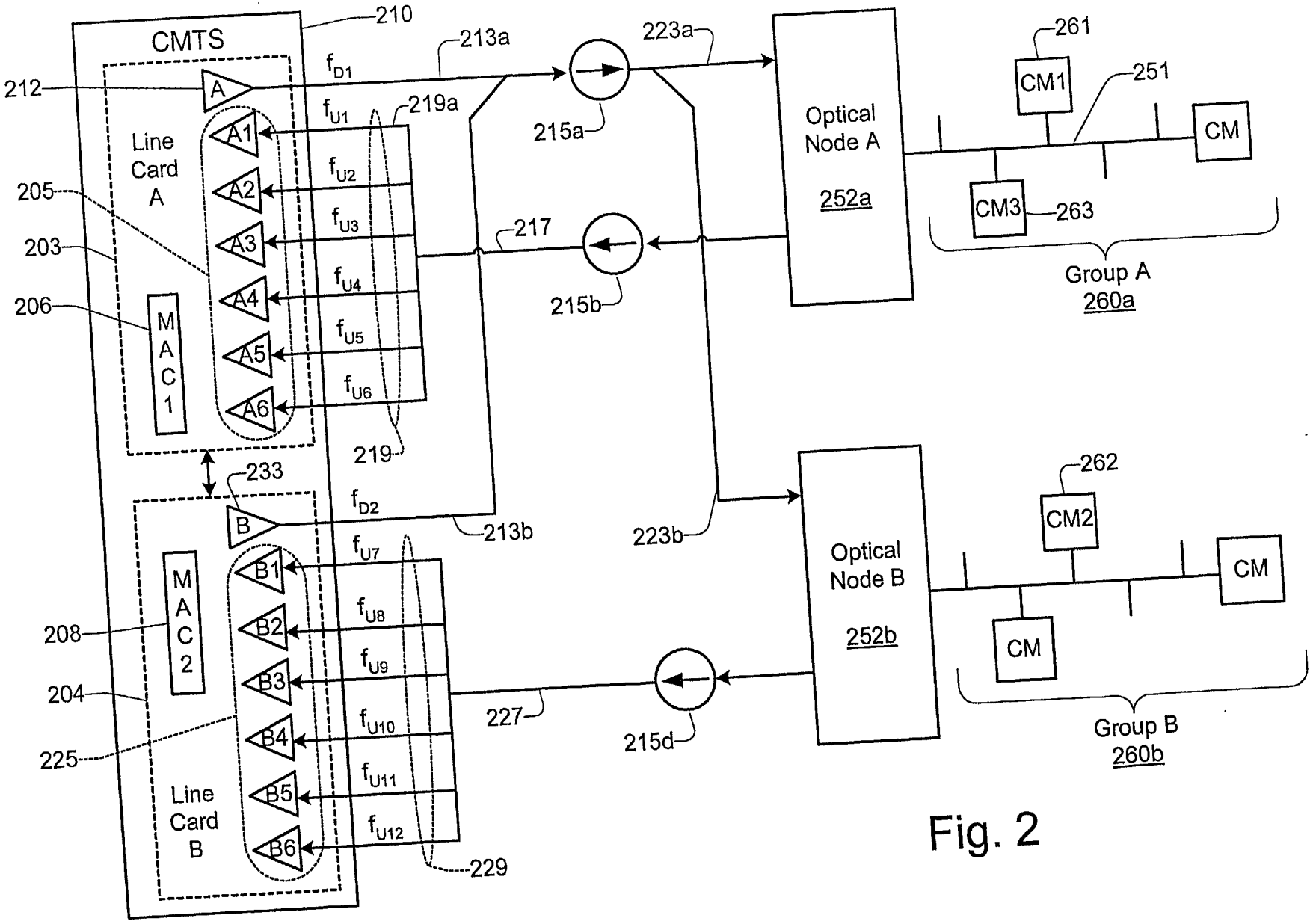


Fig. 2

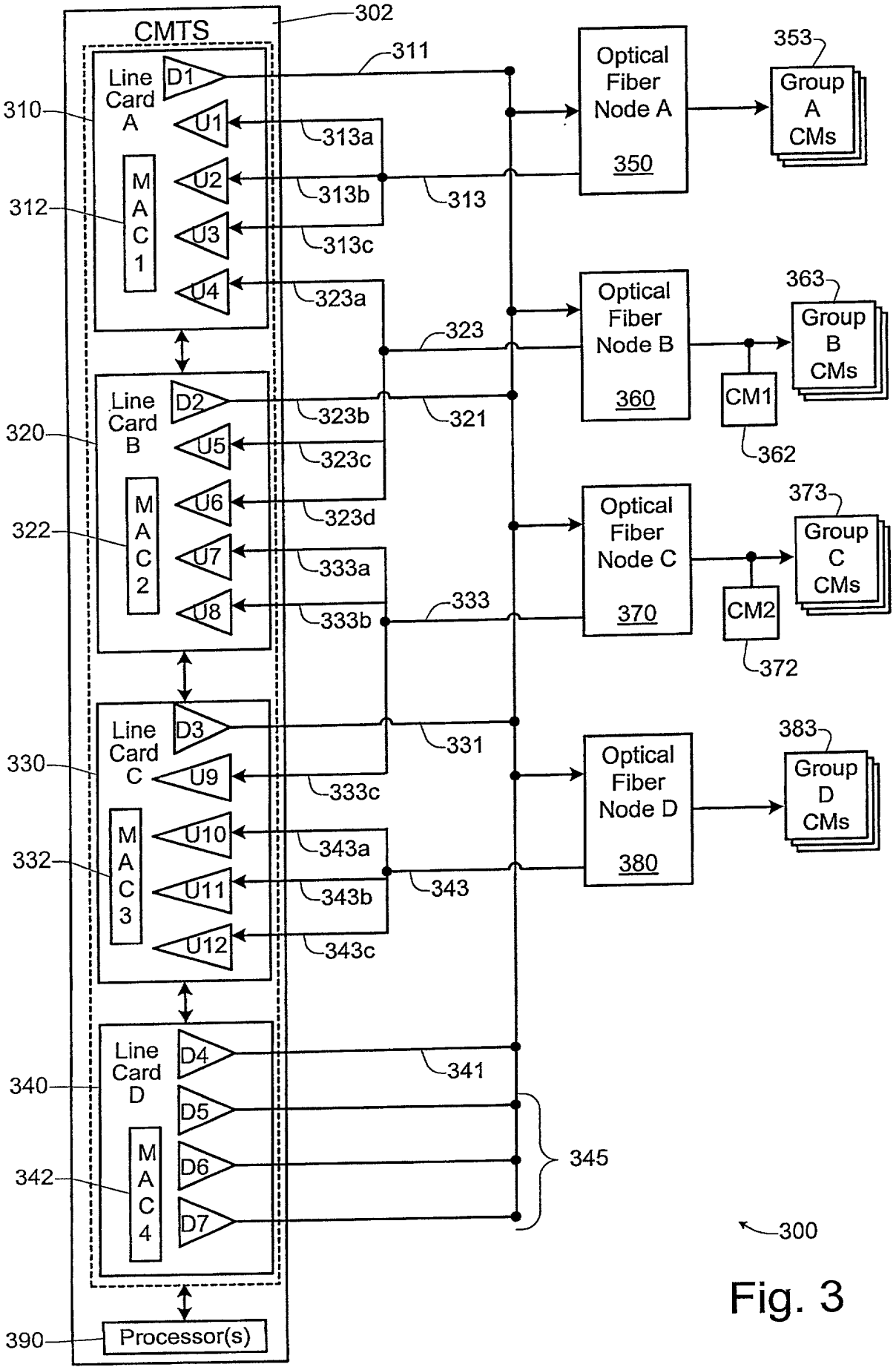

CMTS
302
311
Line Card A
D1
U1
U2
U3
U4
MAC 1
310
312
313a
313b
313c
313
323a
323
Line Card B
D2
U5
U6
U7
U8
MAC 2
320
322
323b
323c
323d
321
333a
333b
333
Line Card C
D3
U9
U10
U11
U12
MAC 3
330
332
331
333c
343a
343b
343c
343
Line Card D
D4
D5
D6
D7
MAC 4
340
342
341
345
Processor(s)
390
Optical Fiber Node A
350
353
Group A CMs
Optical Fiber Node B
360
363
Group B CMs
CM1
362
Optical Fiber Node C
370
373
Group C CMs
CM2
372
Optical Fiber Node D
380
383
Group D CMs
300

Fig. 3

TD2390 2581868

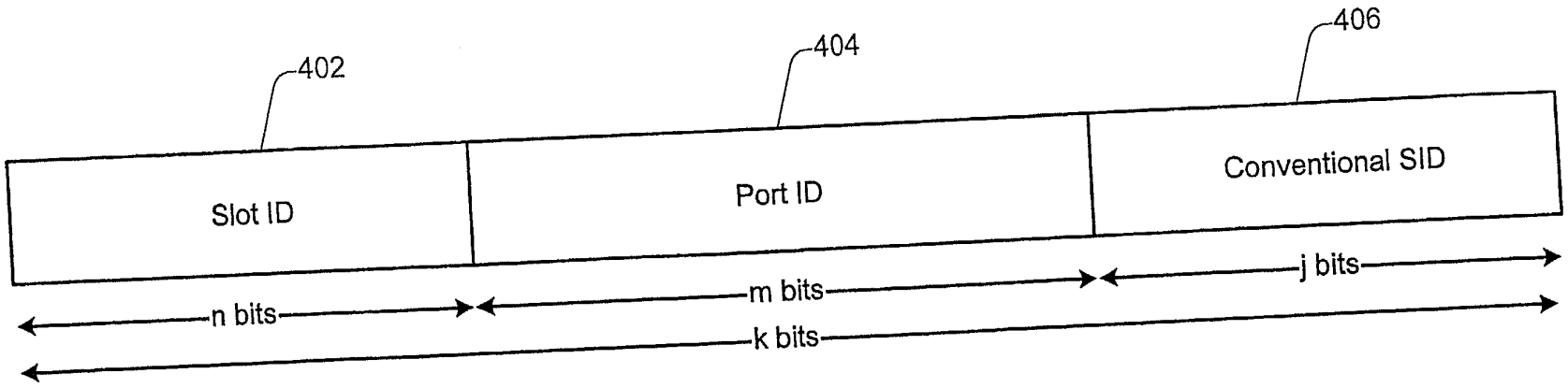


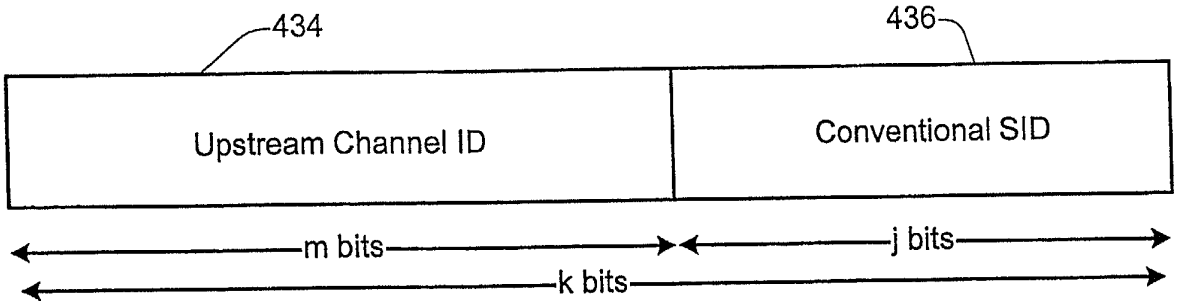
Fig. 4A

451 →	**US1**	Slot 1	Port 1	SID 0-7999
453 →	**US2**	Slot 1	Port 2	SID 0-7999
	US3	Slot 1	Port 3	SID 0-7999
	US4	Slot 1	Port 4	SID 0-7999
455 →	**US5**	Slot 2	Port 1	SID 0-7999
	US6	Slot 2	Port 2	SID 0-7999
	US7	Slot 2	Port 3	SID 0-7999
	⋮	⋮	⋮	⋮

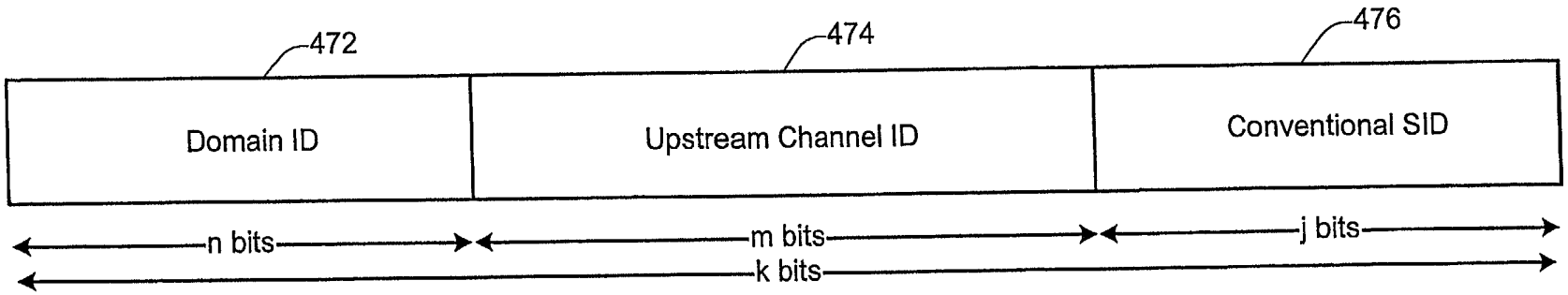
Fig. 4B

450

Docket #



430 Fig. 4C



470 Fig. 4D

TD4290 25bb660

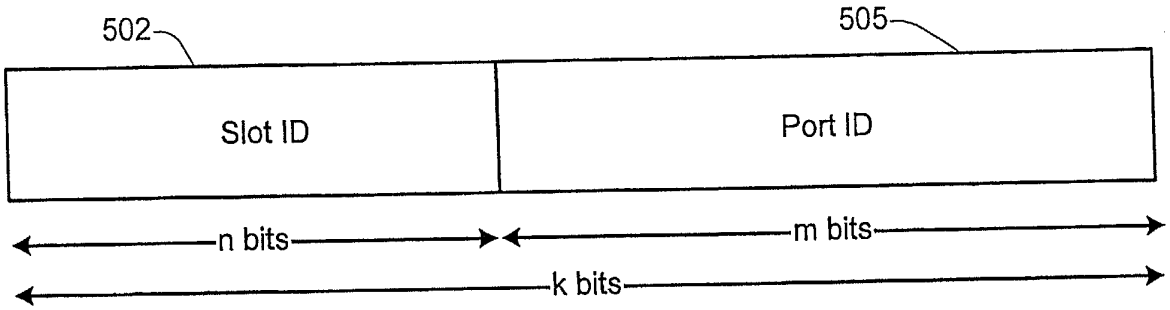


Fig. 5A

500

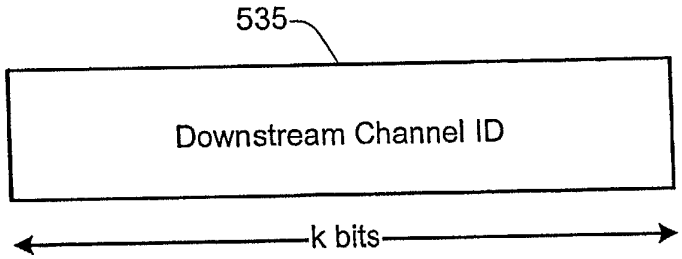


Fig. 5B

530

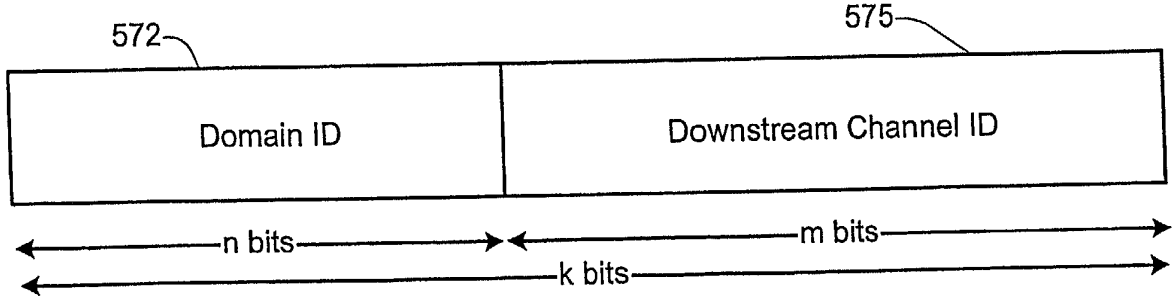


Fig. 5C

570

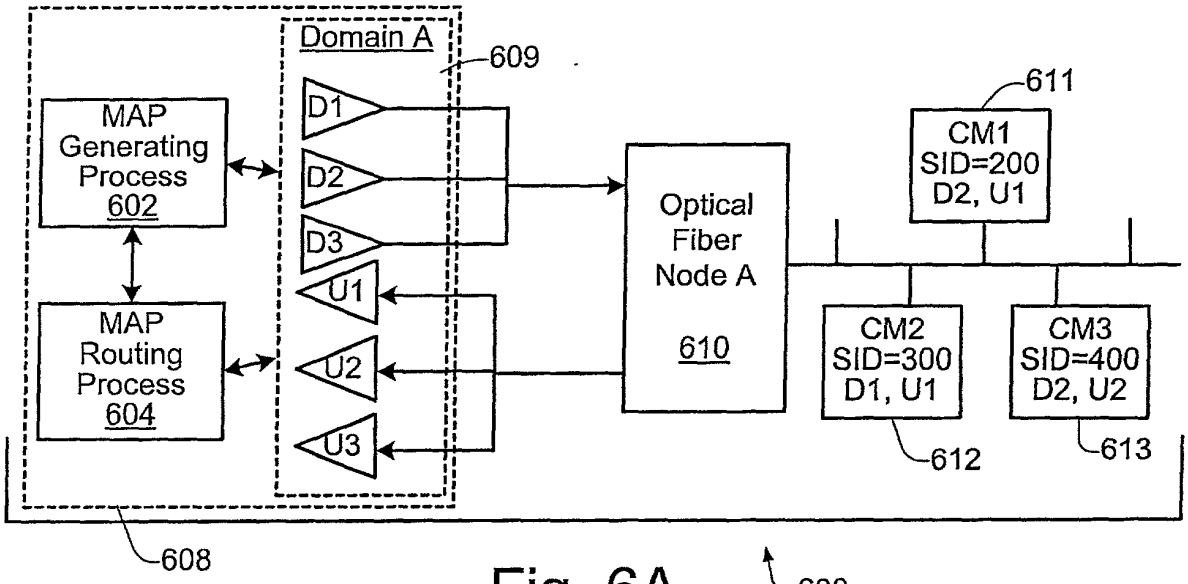


Fig. 6A

622 Internal SID (Slot,Port,SID)	624 US ID	626 DS ID
621 2,1,200	U1	D2
623 2,1,300	U1	D1
625 2,2,400	U2	D2

Membership Table

620

Fig. 6B

	652 D1	654 D2	656 D3
651 U1	A	A	I
653 U2	I	A	I
655 U3	...	...	...

ActivityTable

650

Fig. 6C

Docket #

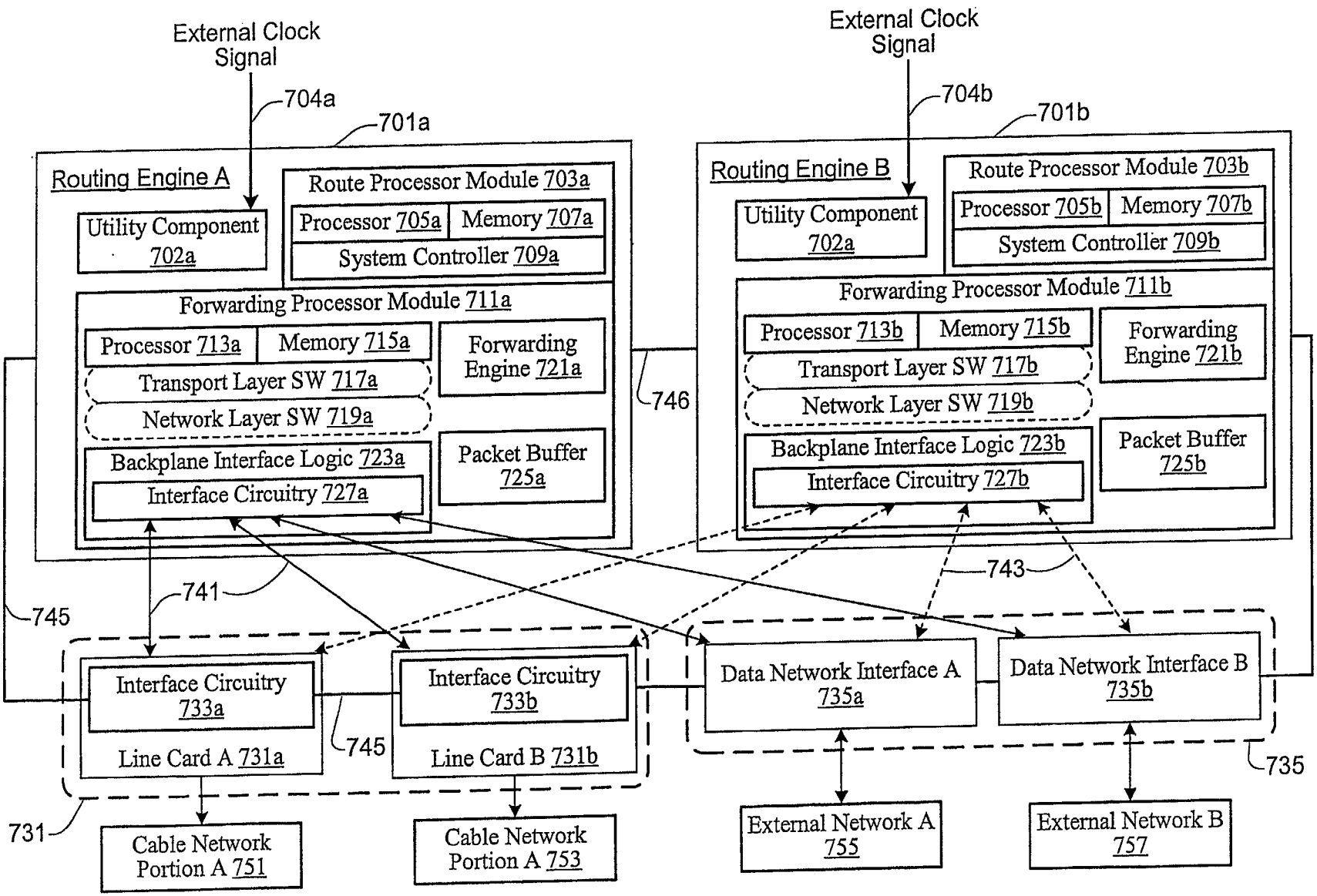


Figure 7 700

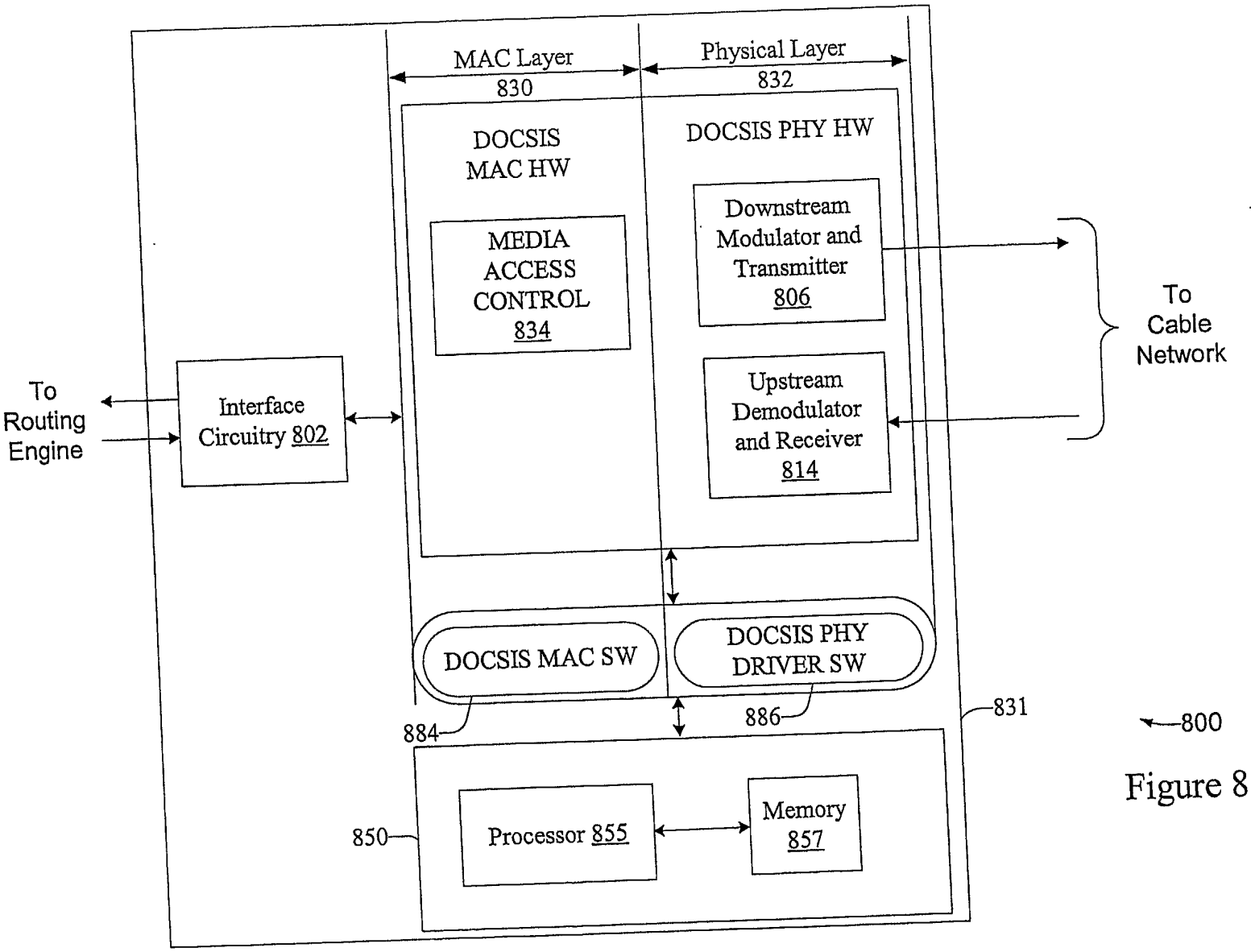

MAC Layer
830
Physical Layer
832
DOCSIS
MAC HW
DOCSIS PHY HW
MEDIA
ACCESS
CONTROL
834
Downstream
Modulator and
Transmitter
806
Upstream
Demodulator
and Receiver
814
To
Cable
Network
To
Routing
Engine
Interface
Circuitry 802
DOCSIS MAC SW
DOCSIS PHY
DRIVER SW
884
886
831
800
850
Processor 855
Memory
857

Figure 8

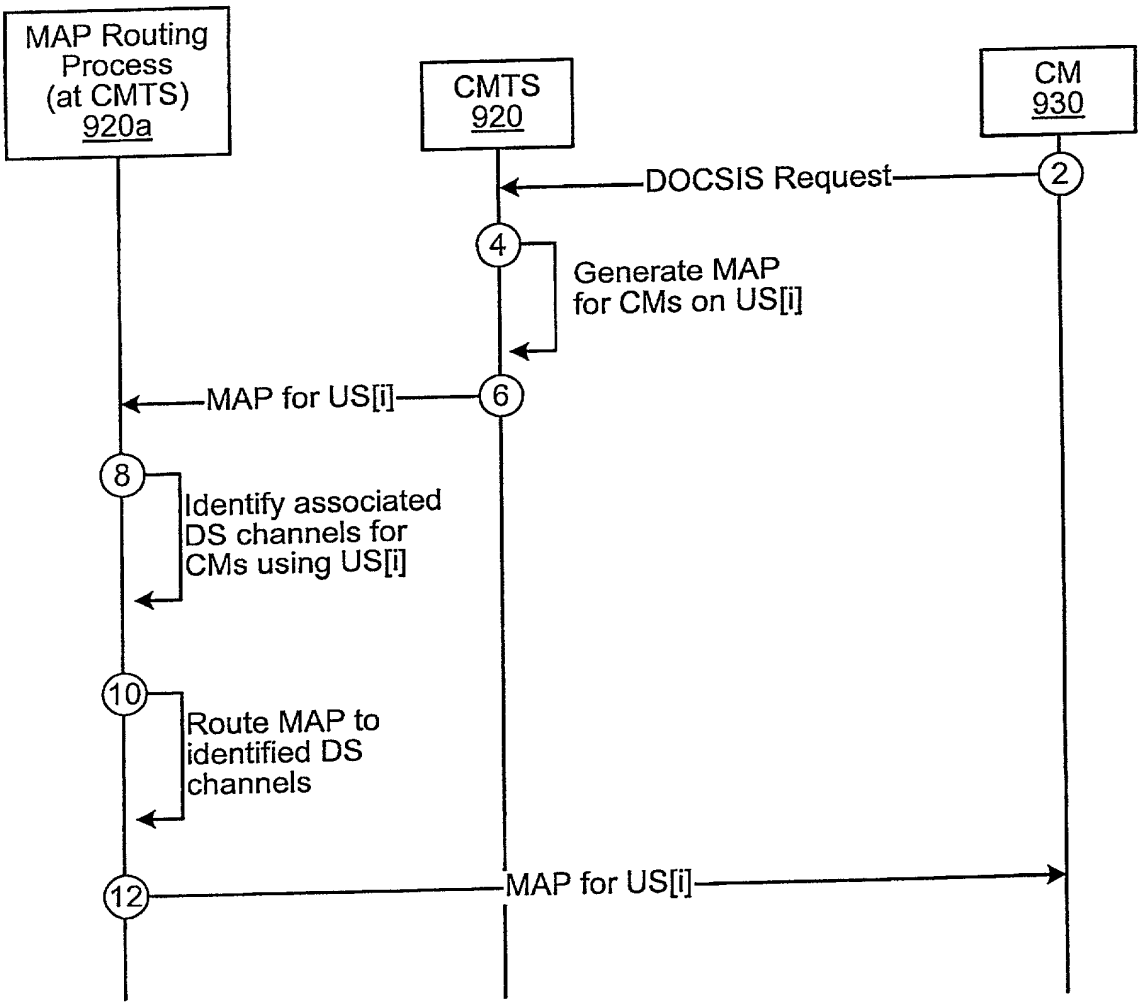

MAP Routing Process (at CMTS) 920a
CMTS 920
CM 930
DOCSIS Request
2
4
Generate MAP for CMs on US[i]
MAP for US[i]
6
8
Identify associated DS channels for CMs using US[i]
10
Route MAP to identified DS channels
12
MAP for US[i]

Fig. 9

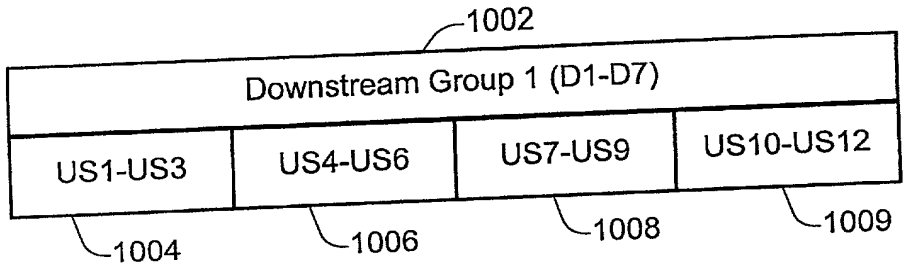


Fig. 10A

1010

1022 DS Load Sharing Group ID	1024 DS Channels	1026 Sub-Domain ID
DSG1	D1-D7	A

Fig. 10B

1020

1032 US Load Sharing Group ID	1034 US Channels	1036 Sub-Domain ID
USG1	US1-US3	A
USG2	US4-US6	A
USG3	US7-US9	A
USG4	US10-US12	A

Fig. 10C

1030

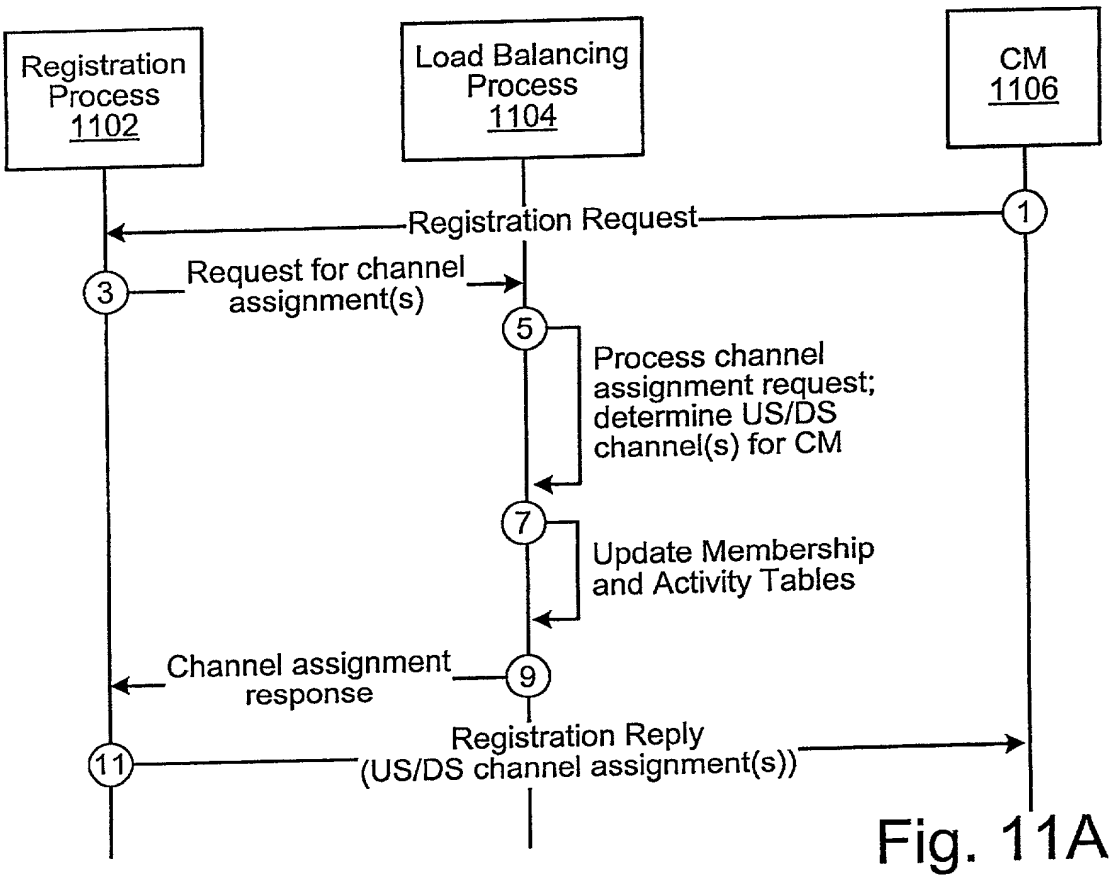


Fig. 11A

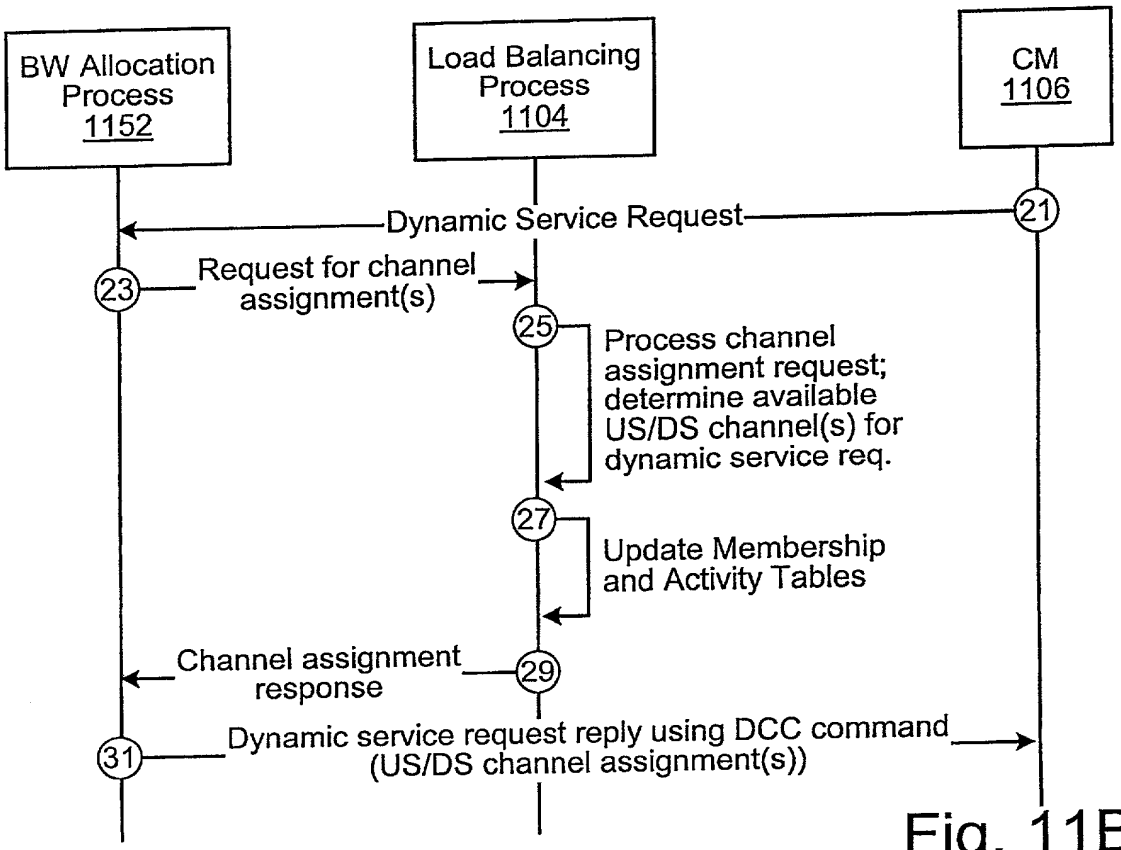


Fig. 11B

TO230 "essages

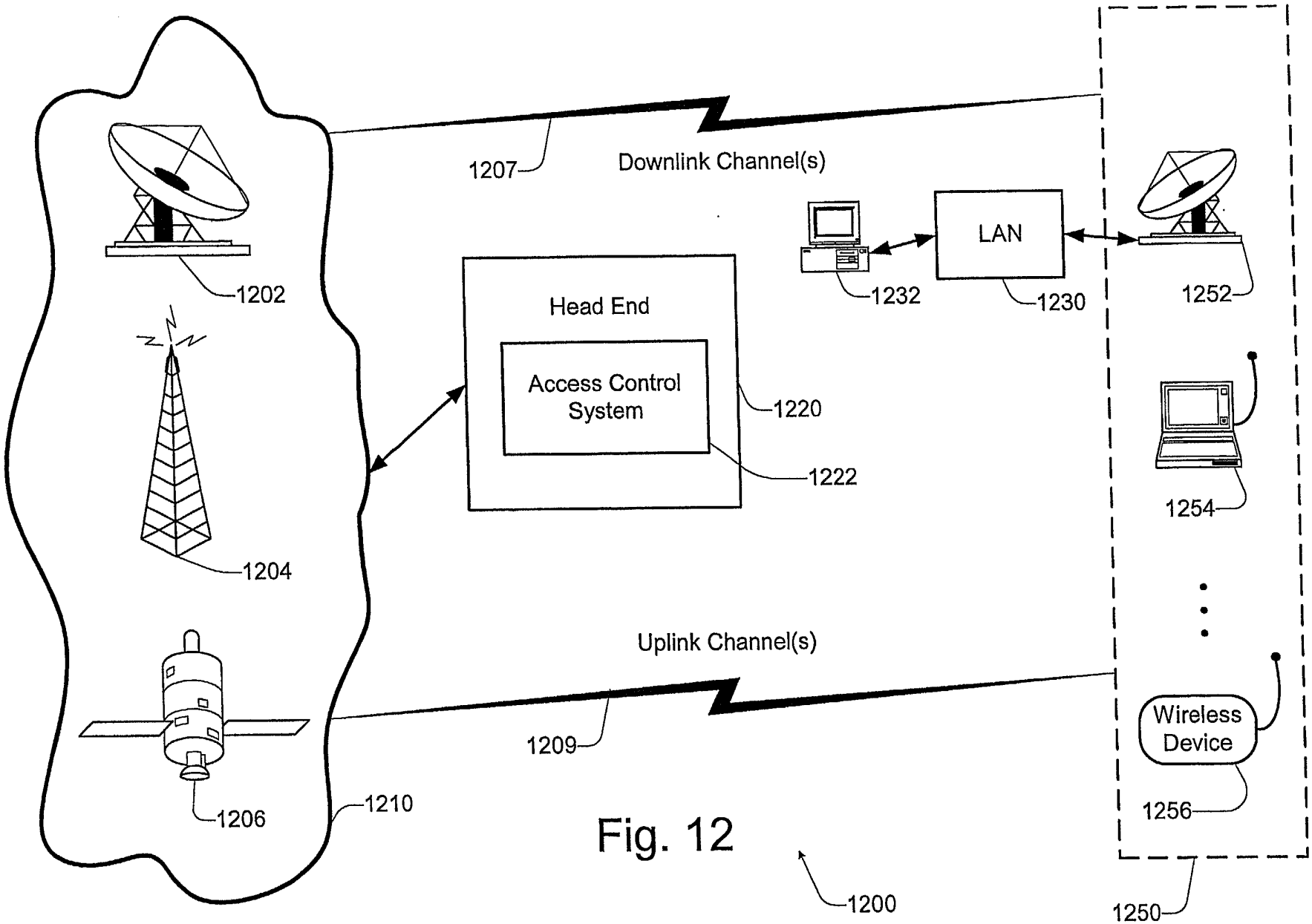


Fig. 12

T02290 "258h6650

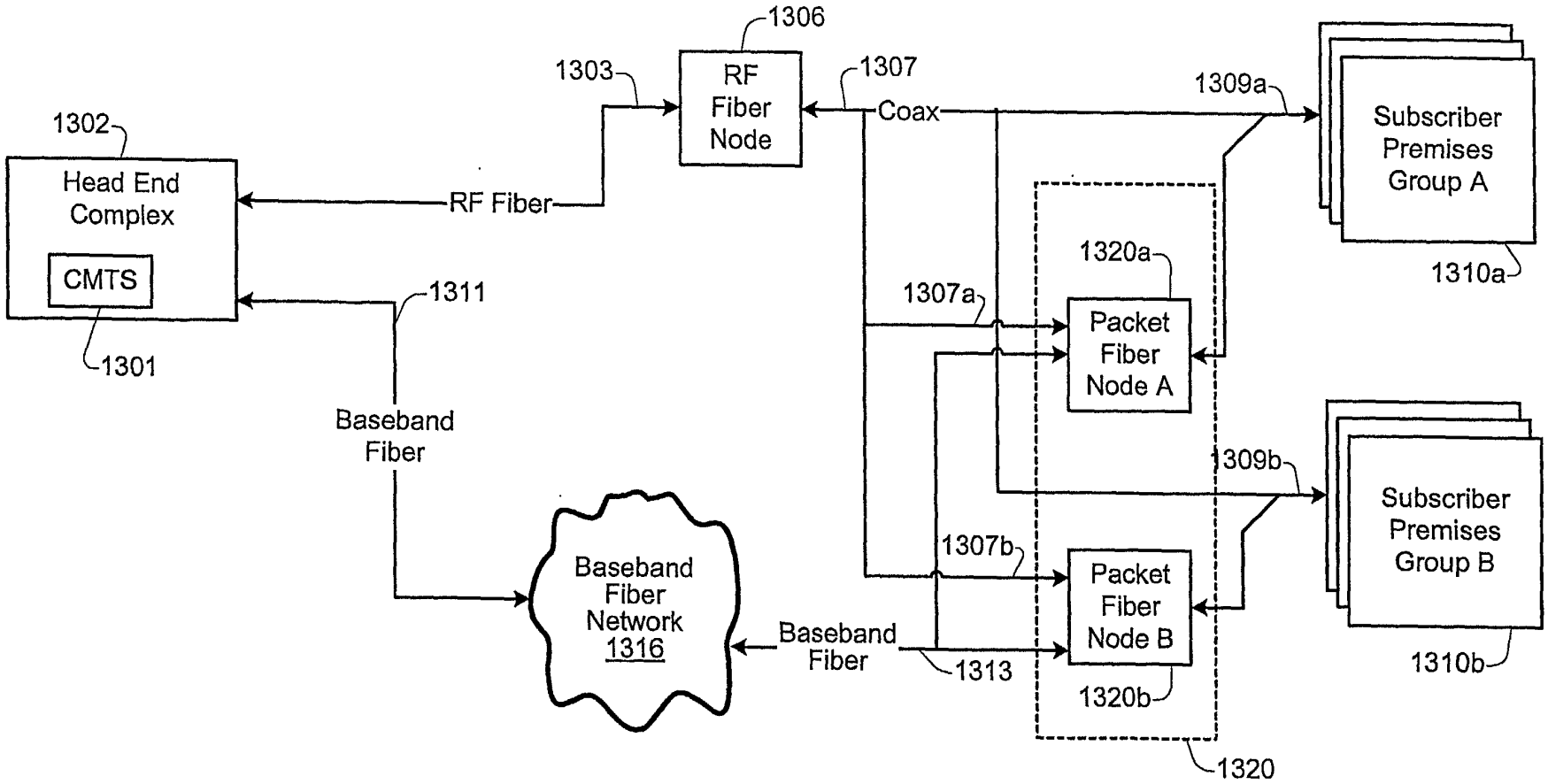


Fig. 13 1300

T0Z290 2S3h6860

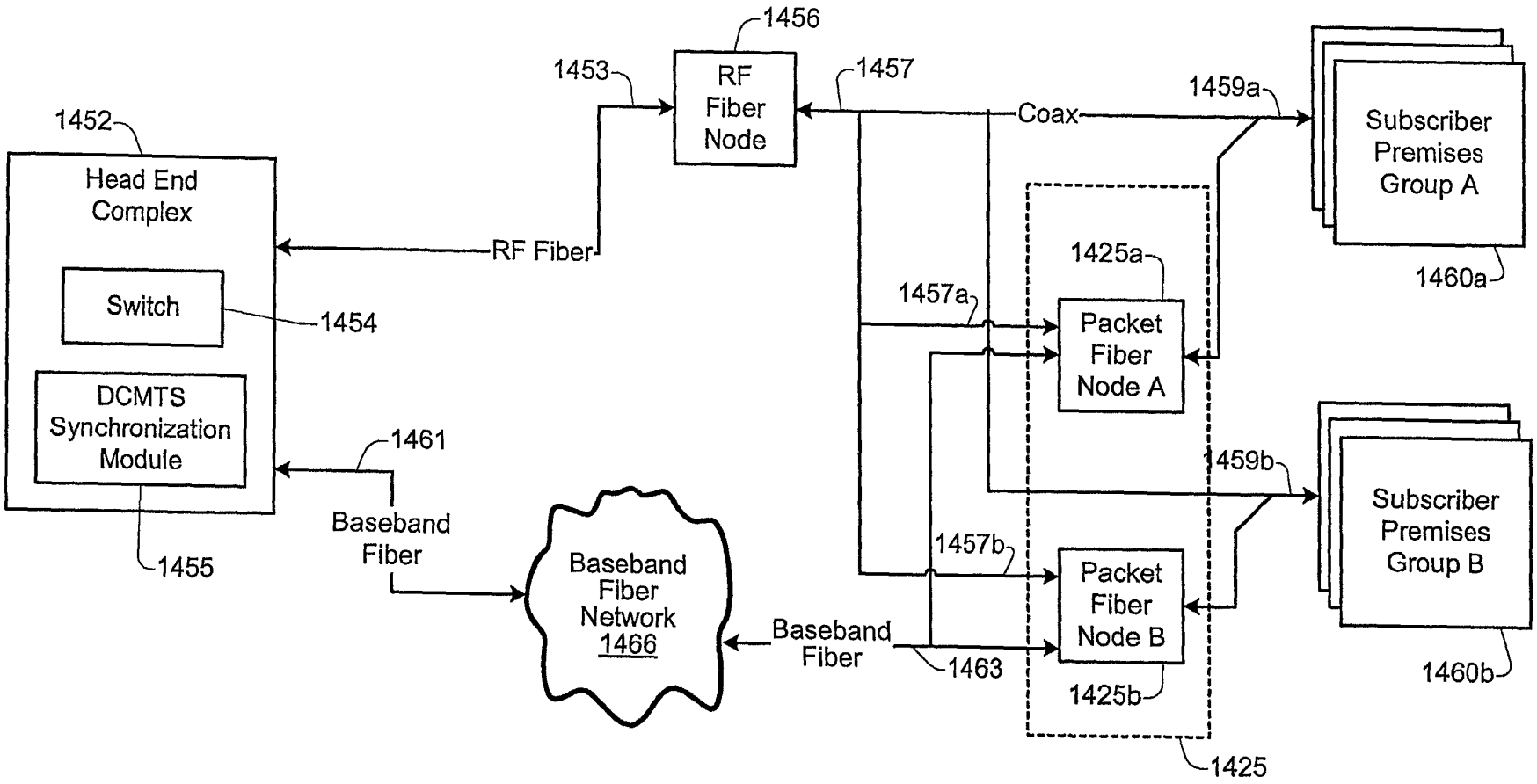


Fig. 14